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# Quality Engineering Test Report

**SERIES: SD-100B 100W DC-DC SINGLE OUTPUT SWITCHING POWER SUPPLY**

**SAMPLE: A. SD-100B-5 5V / 20A**
**B. SD-100B-12 12V / 8.5A**
**C. SD-100B-24 24V / 4.2A**

| NO | TEST ITEM | TEST CONDITION / SPECIFICATION | RESULT | VERDICT |
|---|---|---|---|---|
| 1 | DC INPUT VOLTAGE RANGE | I/P : TESTING SPEC : 19~36VDC<br>O/P : FULL LOAD | A:17.2~36VDC | P |
| 2 | LINE REGULATION | I/P : 19~36VDC SPEC : A:±0.5%<br>O/P : FULL LOAD B:±0.3%<br>C:±0.2% | A:-0.14%~+0%<br>B: -0%~+0.03%<br>C -0.03%~+0% | P |
| 3 | LOAD REGULATION | I/P : 24VDC SPEC : A:±0.5%<br>O/P : MIN. TO FULL LOAD B:±0.3%<br>C:±0.2% | A:-0.12%~+0.12%<br>B: -0%~+0.05%<br>C: -0%~+0.05% | P |
| 4 | OUTPUT VOLTAGE TOLERANCE | I/P : 19~36VDC SPEC : A:±2%<br>O/P : MIN. TO FULL LOAD B:±1%<br>C:±1% | A:-0.14%~+0.24%<br>B: -0%~+0.2%<br>C:-0.03%~+0.05% | P |
| 5 | RIPPLE&NOISE | I/P : 24VDC SPEC : A:100mVp-p<br>O/P : FULL LOAD B:120mVp-p<br>C:150mVp-p | A: 22mV<br>B: 18mV<br>C: 7mV | P |
| 6 | DC INPUT CURRENT | I/P : 24VDC SPEC : 6A<br>O/P : FULL LOAD | A:5.9A | P |
| 7 | MAX. INRUSH CURRENT | I/P : 24VDC SPEC : NONE<br>O/P : FULL LOAD | A:45.7A | P |
| 8 | O/P VOLTAGE ADJ. RANGE | I/P : 24VDC SPEC : A:4.5~5.5V<br>O/P : MIN. LOAD B:11~16V<br>C:23~30V | A:4.36~6.22V<br>B:9.27~16.44V<br>C:22.40~33.12V | P |
| 9 | SET UP TIME | I/P : 24VDC SPEC : 2S<br>O/P : FULL LOAD | A:1826.2mS | P |
| 10 | EFFICIENCY | I/P : 24VDC SPEC : A:74%<br>O/P : FULL LOAD B:75%<br>C:78% | A:74.7%<br>B:76.1%<br>C:80.3% | P |
| 11 | OVER LOAD PROTECTION | I/P : 24VDC SPEC : 105%~135%<br>O/P : TESTING | A:125%<br>B:116.8%<br>C:128.8% | P |
| 12 | OVER VOLTAGE PROTECTION | I/P : 24VDC SPEC : A:5.75V~6.75V<br>O/P : 10% LOAD B:16.8V~20V<br>C:31.5V~37.5V | A:6.35V<br>B:17.51V<br>C:34.82V | P |
| 13 | INSULATION RESISTANCE | SPEC : I/P-O/P : 500VDC/100M Ohms MIN.<br>I/P-FG : 500VDC/100M Ohms MIN.<br>O/P-FG : 500VDC/100M Ohms MIN. | A: I/P-O/P : >100M Ohms<br>I/P-FG : >100M Ohms<br>O/P-FG : >100M Ohms | P |
| 14 | DIELECTRIC / WITHSTAND VOLTAGE | SPEC : I/P-O/P : 1500VAC/ 1 min (10mA CUT-OFF).<br>I/P-FG : 1500VAC/ 1 min (10mA CUT-OFF)<br>O/P-FG : 500VAC/ 1 min (10mA CUT-OFF) | A: I/P-O/P : <3.49mA<br>I/P-FG : <4.46mA<br>O/P-FG : <3.21mA | P |
| 15 | BURN-IN TEST | I/P : 24VDC O/P:FULL LOAD<br>TA : 22.4°C BURN-IN DURATION : 1 hrs | NON BREAK | P |
| 16 | ENVIRONMENT TEST ( SAMPLE A:) | 1.LOW TEMPERATURE TEST<br>I/P : 17.7 VDC O/P : FULL LOAD<br>AMBIENT TEMPERATURE : -10°C | AFTER 1.5 hrs<br>POWER ON OK | P |
| | | 2.HIGH AMBIENT TEMPERATURE FULL LOAD TEST<br>I/P : 24VDC O/P : FULL LOAD<br>AMBIENT TEMPERATURE : 40°C | AFTER 1 hrs<br>NON BREAK | |

NEXT

<table>
<tr><th>NO</th><th>TEST ITEM</th><th>TEST CONDITION / SPECIFICATION</th><th>RESULT</th><th>VERDICT</th></tr>
<tr><td>17</td><td>TEMPERATURE RISE TEST T rise OF PARTS</td><td>A: I/P : 24VDC AFTER 1 hr BURN-IN<br>O/P : FULL LOAD TA : 22.4C<br><table><tr><th>POSITION</th><th>P/N</th><th>TEMP</th><th>T rise</th></tr><tr><td>Q1</td><td>MAIN TRANSISTOR</td><td>88.9°C</td><td>66.5°C</td></tr><tr><td>T1</td><td>MAIN TRANSFORMER</td><td>84.8°C</td><td>62.4°C</td></tr><tr><td>D11</td><td>O/P DIODE</td><td>82.6°C</td><td>60.2°C</td></tr><tr><td>C33</td><td>O/P FILTER CAPACITOR</td><td>68.0°C</td><td>45.6°C</td></tr><tr><td>L1</td><td>O/P CHOCK</td><td>86.4°C</td><td>64.0°C</td></tr><tr><td>C5</td><td>I/P FILTER CAPACITOR</td><td>48.1°C</td><td>25.7°C</td></tr></table></td><td></td><td>P</td></tr>
<tr><td>18</td><td>LIFE CYCLE</td><td colspan="2">A: SUPPOSE C33 IS THE MOST CRITICAL COMPONENT<br>I/P : 24VDC O/P : FULL LOAD Ta : 25°C Tc33 : 68.0°C Life: 22110 hrs<br>I/P : 24VDC O/P : FULL LOAD Ta : 40°C Tc33 : 76.0°C Life: 12699 hrs</td><td>P</td></tr>
<tr><td>19</td><td>CRITICAL COMPONENT RECORD ( FOR QC INSPECTION REFERENCE ONLY )</td><td colspan="3">A: FUSE : F 10AL/250V 5x20 G UL<br>INPUT DIODE : 1N5401<br>LINE FILTER : LF TF-096A EE-25<br>TRANSFOMER : MT TF-308-R1 EER-28L<br>POWER SWITCHER : 2SK850 TO-3P<br>OUTPUT DIODE : CTB-34M TO-3P<br>OUTPUT CAPACITOR : 2200uF/16V(v) 105°C HL<br>INPUT CAPACITOR : N.C.C 330uF/100V KMF 105°C<br>P.C.B : SD-100N-R2 FR-4 2 OZ DS</td></tr>
<tr><th>DATE</th><th>SAMPLE</th><th>TEST RESULT</th><th>TEST</th><th>APPROVAL</th></tr>
<tr><td>980423</td><td>SD-100B</td><td>PASS</td><td>H.C.LIOU</td><td>Max Lin</td></tr>
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